

REMARKS

Reservation of Patent Rights

In this amendment, applicant has amended claims 40 and 44 and cancelled claims 1, 3-11, 25, 29-32 and 35-39 from further consideration in this application. Applicant is not conceding that the subject matter encompassed by claims 1, 3-11, 25, 29-32 and 35-40 and 44 is not patentable over the art cited by the examiner. Claims 1, 3-11, 25, 29-32 and 35-39 were cancelled and claims 40 and 44 were amended in this amendment solely to facilitate expeditious prosecution of the remaining claims. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by claims 1, 3-11, 25, 29-32 and 35-40 and 44 as presented prior to this amendment and additional claims in one or more continuing applications.

Objection to the Drawing

The examiner objected to the drawing, stating Fig. 1 appears to be prior art. This assumption by the examiner is incorrect. In FIG. 1, the operating system 125A includes a virtual resource sharing mechanism 126A that includes a pause/resume mechanism 127A. The function of the pause/resume mechanism 127A is described in detail in FIGS. 5 and 6, and is not prior art. The prior art does not include the pause/resume mechanism 127A shown in FIG. 1. For this reason, the examiner's objection to the drawing is in error, and applicant respectfully requests reconsideration of the examiner's objection to the drawing.

Rejection of claims 1, 3-5, 7, 25, 29-31 and 35 under 35 U.S.C. §112, second paragraph

The examiner rejected claims 1, 3-5, 7, 25, 29-31 and 35 under 35 U.S.C. §112, second paragraph, as being indefinite. All of these claims have been cancelled herein, and therefore need not be addressed.

Rejection of claims 25, 29-32, 35-40 and 44 under 35 U.S.C. §101

The examiner rejected claims 25, 29-32, 35-40 and 44 under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 25, 29-32, and 35-39 have been cancelled herein, and therefore need not be addressed. The remaining claims in this group, namely claims 40 and 44, have been amended herein to recite “storing” instead of “bearing” as suggested by the examiner, thereby traversing the examiner’s rejection of claims 40 and 44 under 35 U.S.C. §101. The examiner cites in the rejection evidence in the specification where the “recordable media” is allegedly defined as a wave at p. 9 lines 5-8. This contention by the examiner is in error. The cited portion of applicant’s specification discloses a genus of “signal bearing media” with two specific species, namely: 1) recordable media; and 2) transmission media. Recordable media such as a CD RW is tangible media, and does not include a carrier wave. As a result, claims 40 and 44 are directed to subject matter that is a statutory article of manufacture under 35 U.S.C. §101.

Rejection of claims 1, 5-8, 11, 25, 31-32, 35-36 and 39 under 35 U.S.C. §103(a)

The examiner rejected claims 1, 5-8, 11, 25, 31-32, 35-36 and 39 under 35 U.S.C. §103(a) as being unpatentable over Constant in view of AAPA. All of these claims have been cancelled herein, and therefore need not be addressed.

Rejection of claims 3-4, 9-10, 12, 29-30, 37-38, 40 and 43-44 under 35 U.S.C. §103(a)

The examiner rejected claims 3-4, 9-10, 12, 29-30, 37-38, 40 and 43-44 under 35 U.S.C. §103(a) as being unpatentable over the combination of Constant, AAPA and Yu. Claims 3-4, 9-10, 29-30 and 37-38 have been cancelled herein, and therefore need not be addressed. The remaining claims in this group, namely claims 12, 40 and 43-44 are addressed in detail below.

Claim 12

In rejecting claim 12, the examiner relies upon the combination of Constant and AAPA in the rejection of claims 1, 6, 25 and 32. In these rejections, the examiner maps col. 6 lines 20-25 of Constant on the pause/resume mechanism that sends a pause message, and maps col. 7 lines 10-15 on the sending of a resume message. The examiner admits Constant does not explicitly teach the system having first and second operating systems that deal with the case when the first operating system needs to be restarted. The examiner then cites to AAPA as allegedly teaching first and second operating systems that deal with the case when the first operating system needs to be restarted. The examiner then concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Constant's invention with AAPA to arrive at all of the limitations in claim 12. Applicant respectfully asserts the examiner's combination of Constant and AAPA is in error, and even if proper, the combination does not teach or suggest all of the limitations in claim 12.

Constant discloses pausing a plurality of processes, then resuming the plurality of paused processes. Constant does disclose a pause notification to the processes, a pause complete response from the processes, and a resume notification to the processes.

AAPA as cited by the examiner at p. 2 line 23 to p. 3 line 5 states:

In the prior art, when a target operating system needs to be restarted, the target operating system is simply shut down without regard to the effect on initiator operating systems that may be sharing resources owned by the target operating system. As a result, the restarting of a target operating system can cause all of the initiator operating systems to crash due to unavailable shared resources. Without a way to restart a target operating system that shares resources without causing the initiator operating systems to crash, all operating systems that share a resource will have to be restarted when the target operating system that owns the resource is restarted.

AAPA thus discloses the nature of the problem, and does not hint at any particular solution. The examiner's rejection assumes one of ordinary skill in the art at the time the invention was made would be motivated to extend the teachings of Constant as relate to processes to the realm of operating systems simply because AAPA describes an existing problem with shutting down an operating system when other operating share a resource owned by the operating system that needs to shut down. Applicant respectfully asserts the combination of Constant and AAPA cited by the examiner would not have been obvious to one of ordinary skill in the art at the time the invention was made because it is not clear how the pause notification, pause complete response, and resume notification in Constant could be applied to operating systems absent the information in applicant's disclosure. As a result, the examiner has used impermissible hindsight reconstruction in combining Constant, AAPA and Yu. For this reason alone, the rejection of claim 12 under 35 U.S.C. §103(a) is in error.

Even if the combination of Constant and AAPA would have been obvious as asserted by the examiner's rejection, a reasonable combination of the two would not produce all of the limitations in claim 12. Claim 12 recites: "a pause/resume mechanism that sends a pause message to the second operating system when the first operating system needs to be restarted." Even if Constant and AAPA were combined, the combination would not result in a pause/resume mechanism in a first operating system sending a pause message to the second operating system *when the first operating system needs to be restarted* as recited in claim 12. Nowhere do either Constant or AAPA or their combination teach or suggest sending a pause message to the second operating system *when the first operating system needs to be restarted*, as recited in claim 12. As a result, claim 12 is allowable over the combination of Constant, AAPA and Yu.

Claim 12 further recites the pause/resume mechanism "that receives a pause complete message from the second operating system to indicate the second operating system has completed pending accesses to the shared resource." Even if Constant and

AAPA were combined, the combination would not result in a pause/resume mechanism in a first operating system that receives a pause complete message from the second operating system *to indicate the second operating system has completed pending accesses to the shared resource*, as recited in claim 12. Nowhere do either Constant or AAPA or their combination teach or suggest receiving a pause complete message from the second operating system *to indicate the second operating system has completed pending accesses to the shared resource*, as recited in claim 12. As a result, claim 12 is allowable over the combination of Constant, AAPA and Yu.

Claim 12 further recites the pause/resume mechanism “that sends a resume message to the second operating system after the first operating system is restarted to indicate to the second operating system that the first operating system is ready to resume sharing the shared resource with the second operating system.” Even if Constant and AAPA were combined, the combination would not result in a pause/resume mechanism in a first operating system that sends a resume message to the second operating system *after the first operating system is restarted to indicate to the second operating system that the first operating system is ready to resume sharing the shared resource with the second operating system*, as recited in claim 12. Nowhere do either Constant or AAPA or their combination teach or suggest sending a resume message after the first operating system is restarted to indicate the claimed limitations. As a result, claim 12 is allowable over the combination of Constant, AAPA and Yu.

Because the examiner has not considered the conditions under which the messages in claim 12 are sent, and what these messages indicate as expressly recited in claim 12, the examiner has failed to establish a prima facie case of obviousness for claim 12 under 35 U.S.C. §103(a). Nowhere does the combination of Constant and AAPA teach or suggest the conditions under which the messages in claim 12 are sent, and what those messages indicate. As a result, claim 12 is allowable over the combination of Constant, AAPA and Yu.

In rejecting claim 12, the examiner admits Constant and AAPA fail to teach the pause/resume mechanism disconnects/reconnects the first operating system from the second operating system, specifically the first OS sending the disconnect/reconnect messages to the second operating system. The examiner then states Yu discloses a system that sends disconnect/reconnect messages from the first operating system to the second operating system, citing FIGS. 3b, 3d, 3m and 3o of Yu, along with col. 11, lines 43-57 and col. 14, lines 15-27. Applicant respectfully asserts Yu does not teach disconnecting/reconnecting between operating systems. As a result, the examiner's rejection does not have merit.

Yu discloses a system with two different operating systems. The portions of Yu cited by the examiner relate to a network terminal driver (NTD) disconnecting and reconnecting a communication path between the NTD driver and the multiplexer driver. Col. 2, lines 20-23 and lines 33-35. The disconnecting and reconnecting a communication path between the NTD driver and the multiplexer driver does not read on the disconnect message and the connect message between operating systems in claim 12. In Yu, communications between operating systems are performed via the mailboxes 197 in the common memory 190 shown in FIG. 1. The connection of an NTD driver 195 to physical drivers in the system memory portion of XCP Memory 200 does not read on disconnect and connect messages between operating systems that relate to sharing of resources. Regardless of whether the NTC driver in Yu is connected or disconnected to the multiplexer driver, the two operating systems are still connected. This is shown conclusively at col. 8 lines 23-29 of Yu, which states:

After the user has been logged onto the DPS system, the user can then switch to the XCP processing unit and operating system, by issuing a switch command for bringing about the change in systems. The result is that while the users have "switched" to the XCP processing unit, the HVS operating system continues to perform communications functions for such users. For example, users that have logged in through NTD module MLX controller connections and have switched to the XCP processing unit, still have all I/O operations passed through the NTD module 195.

As stated clearly above in Yu, even when switched to the XCP processing unit and operating system, the HVS operating system continues to perform communications for the users. This means both operating systems must be active and functioning, which expressly teaches away from disconnecting the operating systems, then reconnecting the operating systems. Applicant strongly asserts Yu does not teach the disconnect message and connect message recited in claim 12.

In addition, there is no teaching in Yu that reasonably reads on the conditions and reasons for the disconnect and connect messages recited in claim 12. Claim 12 recites:

. . . sends a disconnect message to the second operating system before the first operating system is restarted, that sends a connect message to the second operating system after the first operating system is restarted to inform the second operating system that the first operating system has been restarted, . . .

Nowhere does Yu nor the combination of Constant or AAPA teach or suggest a pause/resume mechanism in a first operating system that sends a disconnect message to the second operating system *before the first operating system is restarted*. In addition, nowhere does Yu nor the combination of Constant or AAPA teach or suggest a pause/resume mechanism in a first operating system that sends a connect message to the second operating system *after the first operating system is restarted*. Furthermore, nowhere does Yu nor the combination of Constant or AAPA teach or suggest a pause/resume mechanism in a first operating system that sends the connect message *to inform the second operating system that the first operating system has been restarted*.

The examiner has found bits and pieces of prior art that read on certain limitations in the claims, but has utterly ignored most of the conditions under which the messages are sent and why the messages are sent. None of the following conditions or limitations in claim 12 has been adequately addressed in the examiner's rejection:

when the first operating system needs to be restarted,
to indicate the second operating system has completed pending
accesses to the shared resource,
before the first operating system is restarted,
after the first operating system is restarted
to inform the second operating system that the first operating
system has been restarted,
after the first operating system is restarted
to indicate to the second operating system that the first operating
system is ready to resume sharing the shared resource with the second
operating system.

Because the examiner did not address these many limitations in the rejection of claim 12, the examiner has failed to establish a prima facie case of obviousness for claim 12 under 35 U.S.C. §103(a). None of Constant, AAPA or Yu teach or disclose the many limitations listed above. As a result, claim 12 is allowable over the combination of Constant, AAPA and Yu.

For the many reasons given above, the examiner's rejection of claim 12 based on Constant, AAPA and Yu is defective, and applicant respectfully requests reconsideration of the examiner's rejection of claim 12 under 35 U.S.C. §103(a).

Claim 40

Claim 40 has been amended herein to recite the pause/resume mechanism in the first operating system. This makes claim 40 a program product with a scope similar to claim 12. As a result, claim 40 is allowable for the same reasons given above for the allowability of claim 12.

Claims 43-44

Claims 43 and 44 include many limitations similar to those in claim 12 above, and are therefore allowable for the same reasons. In addition, claims 43 and 44 recite “disconnecting the first operating system from the second operating system before the first operating system is restarted” and “reconnecting the first operating system and the second operating system after the first operating system is restarted.” Nowhere do Constant, AAPA or Yu teach or suggest disconnecting and reconnecting operating systems as recited in claims 43 and 44. As a result, claims 43 and 44 are allowable over the combination of Constant, AAPA and Yu.

Conclusion

In summary, none of the references, nor their combination teach, support, or suggest the unique combination of features in applicants’ claims presently on file. Therefore, applicants respectfully assert that all of applicants’ claims are allowable. Such allowance at an early date is respectfully requested. The Examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

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Respectfully submitted,

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